AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended): Gripper provided with air chokes using vacuum suction, capable of transporting various material and objects, wherein said gripper consists of a modular structure, which comprises:

a central profile section core whose dimension is fitted to the size of the piece to be transported, ~~and~~

profile sections fitted in order to be affixed perpendicularly onto this central core, with mechanisms for affixing these profile sections at ~~the~~ selected ~~location~~ locations,

longitudinally extending supports mounted ~~at the ends of these profile sections~~ on ball and socket bearing supports by ball and socket bearings, said ball and socket bearing supports being mounted on the profile sections, and

air chokes that are affixed to the ends of the supports, so as to enable an angular clearance of the air chokes.

2. (Currently amended): Gripper according to claim 1, wherein the ~~central core is profiled~~ profile of the central core comprises at least one groove for laterally clamping suction pipes for the air chokes.

3. (Currently amended): Gripper according to claim 1, wherein the mechanisms for affixing the profile sections to the central core ~~consist~~ comprise, for each profile section, ~~of~~ an angle bracket cooperating with a small plate slidable along a groove of the central core, so as to

allow the profile sections to become clamped ~~to~~ at any position ~~of~~ on the central core.

4. (Currently amended): Gripper according to claim 1, wherein ~~each support~~ at least one of the air choke supports is longitudinally adjustable, thus making it possible to transport pieces having awkward shapes.

5. (Currently amended): Gripper according to claim 1, wherein at least two of the supports have different lengths so as to serve as extension pieces.

6. (Currently amended): Gripper according to claim 1, wherein the air choke supports each comprise a rod which is slidable into a piece with a shape of a ball which is mounted in the ball and socket bearing, and a spring is mounted between the rod and the piece with a shape of a ball.

7. (Currently amended): Gripper according to claim 1, wherein the ball and socket bearing supports are attached onto the corresponding profile section so that they are slidably adjustable along the profile section.

8. (Currently amended): Gripper according to claim 1, wherein said gripper comprises ~~extension pieces and extended supports that~~ an extension piece to be affixed between at least one of the profile sections and the corresponding ball and socket bearing support, so as to enable the air chokes to suction by vacuum pieces whose shapes or differences in height are sizeable.

9. (Previously presented): Gripper according to claim 1, wherein said gripper comprises sloped shims that make it possible to increase the angular clearance by a predetermined angle.

10. (Currently amended): Gripper according to claim 1, wherein said gripper is fitted in order to be affixed onto a robot or on a mechanized system ~~by means of a manual interface~~ in order to allow an effective clamping of the gripper with a large amount of rigidity.

11. (Canceled)

12. (Currently amended): Gripper provided with air chokes using vacuum suction, capable of transporting various ~~material~~ materials and objects, wherein said gripper consists of a modular structure, which comprises a central profile section core whose dimension is fitted to the size of the piece to be transported, and profile sections fitted in order to be affixed perpendicularly onto this central core, mechanisms for affixing these profile sections at the selected location, and air chokes that are affixed to the ends of the profile section by ball and socket bearings, so as to enable an angular clearance of the air chokes, wherein said gripper is mounted onto a crosspiece that is itself mounted either onto a robot or onto a mechanized system, and that accommodates three interfaces that make it possible to mount a gripper to a center interface for small pieces to be transported, or to end interfaces for pieces that have large dimensions.

13. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various materials and objects, wherein said gripper consists of a modular structure, which comprises a central profile section core whose dimension is fitted to the size of the piece to be transported, and profile sections fitted in order to be affixed perpendicularly onto this central core, mechanisms for affixing these profile sections at the selected location, and air chokes that are affixed to the ends of the profile section by ball and socket bearings, so as to enable an angular clearance of the air chokes, wherein at least two of the supports have different lengths so as to serve as extension pieces.

14. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various materials and objects, wherein said gripper consists of a modular structure, which comprises a central profile section core whose dimension is fitted to the size of the piece to be transported, and profile sections fitted in order to be affixed perpendicularly onto this central core,

mechanisms for affixing these profile sections at the selected location, and air chokes that are affixed to the ends of the profile section by ball and socket bearings, so as to enable an angular clearance of the air chokes, wherein the supports each comprise a rod which is slidable into a piece with a shape of a ball which is mounted in the ball and socket bearing, and a spring is mounted between the rod and the piece with a shape of a ball.

15. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various materials and objects, wherein said gripper consists of a modular structure, which comprises a central profile section core whose dimension is fitted to the size of the piece to be transported, and profile sections fitted in order to be affixed perpendicularly onto this central core, mechanisms for affixing these profile sections at the selected location, and air chokes that are affixed to the ends of the profile section by ball and socket bearings, so as to enable an angular clearance of the air chokes, wherein said gripper comprises sloped shims that make it possible to increase the angular clearance by a predetermined angle.

16. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various material and objects, wherein said gripper consists of a modular structure, which comprises:

a central profile section core having a cross-section that remains substantially the same over their length, whose dimension is fitted to the size of the piece to be transported,

profile sections each having a cross-section that remains substantially the same over its length, said profile sections being fitted in order to be affixed perpendicularly onto this central core, with mechanisms for affixing these profile sections at selected locations,

longitudinally extending supports mounted on these profile sections by ball and socket

bearings, and

air chokes that are affixed to the ends of the supports, so as to enable an angular clearance of the air chokes.

17. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various material and objects, wherein said gripper consists of a modular structure, which comprises:

at least one profile section,

longitudinally extending air chokes supports mounted on these profile sections by ball and socket bearings, and

air chokes that are affixed to the ends of the air choke supports, so as to enable an angular clearance of the air chokes,

wherein the profile section has two longitudinal planes of symmetry substantially perpendicular to each other, and comprises two opposed lateral grooves having openings oriented along one of these planes of symmetry and two additional opposed lateral grooves having openings oriented along the other of these planes of symmetry, wherein each of the grooves has a maximum transverse width larger than a width of its opening,

so as to enable affixing air choke supports with the grooves having openings along one of the two planes of symmetry and clamping air tubes to the grooves having openings along the other of the two planes of symmetry.

18. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various material and objects, wherein said gripper consists of a modular structure, which comprises:

at least one profile section having at least one longitudinal plane of symmetry and a lateral groove having an opening along this plane of symmetry, the groove having a maximum transverse width larger than a width of its opening,

an air choke support mounted by a ball and socket bearing on a ball and socket bearing support, said ball and socket bearing support being mounted on the profile section, and

an air choke that is affixed to the end of the air choke support, so as to enable an angular clearance of the air choke,

wherein the ball and socket bearing support is in the shape of an angle bracket which extends away from the plane of symmetry of the profile section,

such that (i) a ball joint on the ball and socket bearing is placed away from the plane of symmetry of the profile section and (ii) a main central axis of the ball joint on the ball and socket bearing is oriented away from the plane of symmetry of the profile section.

19. (New): Gripper provided with air chokes using vacuum suction, capable of transporting various material and objects, wherein said gripper consists of a modular structure, which comprises:

at least one profile section having at least one longitudinal plane of symmetry and a longitudinal groove having an opening along this plane of symmetry, the groove having a maximum transverse width larger than a width of its opening,

an air choke support mounted by a ball and socket bearing on a ball and socket bearing support, said ball and socket bearing support being mounted on the profile section, and

an air choke that is affixed to the end of the air choke support, so as to enable an angular clearance of the air choke,

wherein a main central axis of the ball and socket bearing is oriented away from the plane of symmetry of the profile section, and the ball and socket bearing support is clamped to the profile section independently from the ball joint.

20. (New): Gripper according to claim 2, wherein the central core comprises two opposed lateral grooves.

21. (New): Gripper according to claim 7, wherein each ball and socket bearing support cooperates with a respective small plate slidable along a groove of the corresponding profile section, so as to allow the ball and socket bearings to become clamped at any position on the profile sections.

22. (New): Gripper according to claim 9, wherein the sloped shims are affixed between profile sections and corresponding ball and socket bearing supports.

23. (New) Gripper according to claim 1, wherein the profile sections have at least one longitudinal plane of symmetry, and comprise two opposed lateral grooves with openings oriented along this axis of symmetry.

24. (New) Gripper according to claim 23, wherein the section core also has at least one plane of symmetry, and comprises two opposed lateral grooves with openings oriented along this axis of symmetry.

25. (New) Gripper according to claim 24, wherein the grooves on the profile sections and the grooves on the central core are the same.

26. (New) Gripper according to claim 1, wherein the profile sections each have two longitudinal planes of symmetry substantially perpendicular to each other and comprise two opposed lateral grooves having openings oriented along one of these planes of symmetry and two

additional opposed lateral grooves having openings oriented along the other of these planes of symmetry, wherein each of the grooves has a maximum transverse width larger than a width of its opening,

so as to enable affixing air choke supports to the grooves having openings along one of the two planes of symmetry and clamping air tubes to the grooves with openings along the other of the two planes of symmetry.

27. (New): Gripper according to claim 26, wherein the central core also has two planes of symmetry substantially perpendicular to each other, and comprises two opposed lateral grooves having openings oriented along one of these planes of symmetry and two additional opposed lateral grooves having openings oriented along the other of these planes of symmetry, wherein each of the grooves has a maximum transverse width larger than a width of its opening.

28. (New): Gripper according to claim 27, wherein the grooves on the profile sections and the grooves on the central core are the same.

29. (New): Gripper according to claim 1, wherein the profile sections have at least one longitudinal plane of symmetry and a lateral groove with an opening along this plane of symmetry, the groove having a maximum transverse width larger than a width of its opening, the ball and socket bearing support is in the shape of an angle bracket which extends away from the plane of symmetry of the profile section, such that (i) a ball joint on the ball and socket bearing is placed in a plane away from the plane of symmetry of the profile section, and (ii) a main central axis of the ball and socket bearing is oriented away from the plane of symmetry of the profile section.

30. (New): Gripper according to claim 1, wherein the profile sections have at least one longitudinal plane of symmetry and a longitudinal groove with an opening along this plane of

symmetry, the groove having a maximum transverse width larger than a width of its opening, the ball joint on the ball and socket bearing is oriented away from the plane of symmetry of the profile section, and the ball and socket bearing is clamped to the profile section independently from the ball joint.

31. (New): Gripper according to claim 16, wherein at least one of the supports is mounted on a secondary profile section having a cross-section that remains substantially the same over its length, said secondary profile sections being fitted in order to be affixed perpendicularly onto at least one of the profile sections, with mechanisms for affixing these profile sections at a selected location.

32. (New): Gripper according to claim 17, which comprises at least one profile section core whose dimension is fitted to the size of the piece to be transported, and at least one profile section fitted in order to be affixed perpendicularly onto this central core, with mechanisms for affixing these profile sections at the selected location.

33. (New): Gripper according to claim 17, wherein the profile section comprises a central pipe.

34. (New): Gripper according to claim 18, wherein the ball and socket bearing support cooperates with a small plate slidable along a groove of the profile section, so as to allow the ball and socket bearing support to become clamped at any position on the profile section.

35. (New): Gripper according to claim 18, wherein a plurality of the profile sections are perpendicularly affixed on a central profile section core.

36. (New): Gripper according to claim 19, wherein the ball and socket bearing is in the shape of an angle bracket, so that the ball joint on the ball and socket bearing is placed in a plane

away from the plane of symmetry of the profile section.

37. (New): Gripper according to claim 19, wherein the profile section has two longitudinal planes of symmetry substantially perpendicular to each other, and comprises two opposed lateral grooves having openings oriented along one of these planes of symmetry and two additional opposed lateral grooves having openings oriented along the other of these planes of symmetry, wherein each of the grooves has a maximum transverse width larger than a width of its opening,

so as to enable affixing air choke supports to the grooves having openings along one of the two planes of symmetry and clamping air tubes to the grooves having openings along the other of the two planes of symmetry.